

# Part II. Masking Technique

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**Goal:** The goal for this tutorial is to show how to create sea/land mask and apply those masks to sea/land data creating masked data.

The strategy:

- 3) read the data with fraction land coverage from which the land/sea mask will be created.  
Regrid the fraction to the 5-deg grid, create land and sea masks.
- 4) create sst/tas variables masked with ocean/land masks .

## 3) read the data with fraction land coverage

```
# extract a land/sea mask and regrid it to our desired 5 degree grid
# (these data are percent land coverage [0-100])
c=cdms.open('/pcmdi/PCMDI1/obs/etc/geo.1deg.ctl')
fraction=c('sftlf',squeeze=1)
# plot the fraction field
y=vcs.init()
y.setcolormap('default')
y.plot(fraction)
```

Regrid the fraction to the 5-deg grid, create land and sea masks.

```
# get grid for regridding
grid3=fraction.getGrid()
# etup regrid function
regridfunc=Regridder(grid3,grid1)
# regrid mask values
fraction=regridfunc(fraction)

# create land and sea masks.
# 50% or more coverage in a box is defined as land
# and less than or equal to 50% coverage is ocean.
# All other values in the arrays are zeros.
land=Numeric.where(Numeric.greater(fraction.filled(),50.),1.,0.)
ocean=Numeric.where(Numeric.less_equal(fraction.filled(),50.),1.,0)
```

## 4) create sst/tas variables masked with ocean/land masks .

```
masked_sst=Numeric.multiply(sst_new.filled(),ocean)
masked_tas=Numeric.multiply(tas_new.filled(),land)
```

Plot 'masked\_sst' and 'masked\_tas'

```
x=clear()
x.plot(masked_sst)
```

```
y=clear()
```

```
y.plot(masked_tas)
```

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